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Abstract

Background: Faecal immunochemical test (FIT) is a method for quantification of haemoglobin present in faeces. It plays an important role in primary care to guide referral of symptomatic patients with suspected colorectal cancer (CRC). FIT has a high negative predictive value for CRC, however, there is a cohort of patients who test negative and subsequently develop it. The aim of this systematic review was to summarise, from data published in the literature, trends in the demographics and clinical characteristics of patients diagnosed with CRC after returning a negative FIT.

Methodology: Inclusion criteria: Data from symptomatic UK patients; where patients are diagnosed with CRC after returning a single, negative FIT; the patients were investigated after the completion of FIT; investigations used to confirm CRC post FIT were stated to be histology/biopsy, endoscopy or radiology. Studies which only contained cohorts of patients where multiple FIT had been completed prior to CRC investigation, and any patient where time from FIT to diagnosis was evidenced to be > 1 year, were excluded. Studies were identified using PubMed and screened using the above criteria. Patient data was compiled into a FIT negative cohort, split into subgroups, and corresponding FIT positive cohort.

Results: The data of 156 patients was retrieved, 75 FIT negative (56% F, 44% M) and 81 FIT positive (50% F, 50% M), from 10 studies. Mean and median age of the FIT negative cohort was older (Mean 69.9, Median 74.0); FIT positive (Mean 63.2, 61.0). Most of the FIT negative cohort has right sided CRC (62% R/s, 38% L/s), while the FIT positive cohort was mostly left sided (32% R/s, 68% L/s). Anaemia was more prevalent in right sided CRC (FIT –, 40% R/s, 16% L/s; FIT +, 59.3% R/s, 11.3% L/s). Rectal bleeding was more prevalent in left sided CRC (FIT –, 1.5% R/s, 18.7% L/s; FIT +, 3.7% R/s, 35.2% L/s).

Conclusion: FIT negative CRC may be more prevalent in women, more right sided and diagnosed in older patients. This could have implications for the triaging and choice of investigation in patients with suspected CRC who have negative FIT.

Additional Methods

A search was carried out on the PubMed database on 1/07/25. The search terms used were (“colorectal cancer” OR “CRC” OR “colorectal neoplasia”) AND “UK” AND “FIT negative”. 94 studies were returned from this search. 74 studies were excluded for not containing patient data regarding FIT negative CRC, 2 studies for only containing information about FIT negative CRC location without any additional clinical or demographic detail of the patients which had the CRC at the reported locations, 2 studies for only reporting patient data for those who had conducted multiple FIT before investigation for CRC, 3 studies for having only presented the FIT negative CRC patients’ clinical and demographic characteristics in a summarised format, 2 studies for reporting patient data from CRC screening in a non-symptomatic cohort, and 1 study was removed for reporting duplicate FIT negative CRC patient data. This left 10 studies which were included in the systematic review. As a result of their time from FIT until diagnosis being evidenced to be greater than 1 year, 2 patients had their data removed from the FIT negative cohort.